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ABSTRACT

By examining large, computer-readable databases at the federal, regional, and state level, this report addresses the degree to which data collected by the state education agencies can be used to describe the condition of rural education. The states covered in this report are Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin. Nationally, the National Center for Education Statistics' Common Core of Data and the Schools and Staffing Survey provide comparable state, multistate or regional, and national information on schools, students, teachers, and administrators. These databases do not include information on curriculum and transportation. Each of the seven states in the report have unique data systems and collect different data elements that do not allow for developing a multistate regional picture. Data flow in state education agencies is decentralized, traveling from the school or district level to a regional education service area, and then to the state education agency. The flow of data back to the local education agencies is limited. Pupil accounting systems, if implemented, use the student as the unit of analysis from which state reporting requirements can be drawn. These systems are interactive with the state education agency and other local education agencies. There is a pressing need for research on and development of an information management system. A clearinghouse on rural education databases was considered but determined to be premature at this time. (KS)

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DESCRIBING RURAL PRIMARY AND SECONDARY EDUCATION: THE ROLE OF STATE EDUCATION AGENCY INFORMATION

Prepared for the
North Central Regional Educational Laboratory

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One in a Series of Reports in NCREL's Rural Education Program

1989

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Introduction

This report examines data on the conditions of rural education collected at the federal regional, and state levels. The states covered in this report comprise the North Central Regional Education Laboratory (NCREL), which serves Illinois, Indiana, Iowa, Michigan, Minnesota, Ohio, and Wisconsin. A description of the data collection and data management systems in each of these states makes up the body of this report.

The central question addressed in this report is the degree to which data collected by state education agencies can be used to describe the condition of rural education. The degree to which these data are useful depends on what data are collected, that is, the actual data elements, and the accessibility of the data, that is, the data flow from the individual school to the state and back to the school. Potentially, these data provide a rich source of information for state and local policy formulation, planning, and administrative decision making.

Questions on the nature of the data collected and their accessibility are complicated by issues relating to the definition of the data elements gathered in individual states and problems in defining what constitutes a rural area. There is no commonly accepted definition of a rural area, but many characteristics have been identified. These include isolation, distance from an urban center, sparse population, and an industry and occupational structure concentrated in natural resources such as mining, agriculture, fishing, energy resources, and forestry. As these industries decline, more and more rural economies are supported by transfer payments and are less culturally homogeneous than they were previously. In many rural communities, there is an out-migration of young people and an in-migration of retirement-age individuals and middle-class families who are employed in urban centers but are seeking the advantages of rural living.

Many rural schools face the effects of declining rural economies and population. The declining value of farmland, the closing of mines, the ecological and economic problems of the fishing and lumber industries, and the oil industry slump have reduced the taxes available to support primary and secondary education. School consolidation has resulted from population and tax-base erosion. Difficulty in attracting quality faculty and administrators to rural schools is a common problem. Another serious dilemma for rural educators is the ability to offer the range of quality curricula necessary for students to obtain the skills they need to keep pace with our rapidly changing and technologically demanding economy. Leadership on school boards is suffering as community business leaders find themselves unable to support local tax increases because these increases are perceived to be antibusiness. As families suffer from unemployment and loss of income, the need for social services to address domestic violence, child abuse, divorce, drug and alcohol abuse, teen pregnancy, loss of self-esteem, and the school dropout problem seems overwhelming. Schools are more and more expected to act as family for children at a time when financial and human resources are most limited. It is more important than ever that these schools have the ability to access information, to formulate policies and programs, to prioritize these issues within individual schools, and to assess the capability to address those problems that are most closely related to their mission.

Methodology

This report examines the large, computer-readable data bases that can describe conditions in rural education. The paradox of these information systems is that there are not sufficient data to do this, yet there are more data collected than will ever be used. Because an inventory and analysis of all computer-readable data bases would have been unmanageable, this report focuses on data collected by state education agencies. These data provide the richest source of information about local schools to the variety of audiences that are most interested in rural education issues. Other large data bases funded by federal programs (e.g., High School and Beyond and the National Longitudinal Study of Youth) disaggregate only to the state level. Even within a state, rural characteristics and the issues they engender can be very diverse. Therefore, data that can be disaggregated to individual school districts and schools provide the best picture of rural education. Furthermore, using the school or the district as the unit of analysis allows for comparisons that demonstrate the unique and common features of rural education in different regions. Such data should also be useful at the local level to develop policy, design plans, and support quality administration and decision making.

Data Categories

Once we made the decision to focus on the administrative files of state education agencies, we reviewed and narrowed the categories of available data. The categories we chose for this report are: students, faculty/staff, curriculum, and transportation. These categories reflect a manageable number of data items to review and provide a beginning point for discussion of the rural education issues that can be described using these data. These categories do not represent the total range of information available, but they are central to describing conditions in rural schools or any school.

Students as the clients of the education system should be understood in terms of their number, sex, race and ethnicity, age, grade, ability, performance, and curricular preference. Several kinds of questions are important to answer. How much of what kinds of services and education will students need? How many math classes will be needed? Are there students for whom English is a second language? How are children of varying abilities and preferences assigned to classes? These questions can be answered using the demographic information discussed above. Here rural schools have much in common with all schools; they need to understand the characteristics of the students they serve. However, rural schools usually have fewer resources to gather and analyze this information either because they lack the funding or they are isolated from urban centers where planning and policy formulation generally takes place.

Data on faculty and staff are important because these groups deliver services to the client group. An understanding of their number, sex, age, qualifications, and years of experience are important to staffing, recruiting, and retention issues.

School reform has paid special attention to the third data category, curriculum, especially revision and availability. Information on curriculum offerings by district or school provides a source of comparative information about alternative means of delivering courses and determines that the curriculum meets state standards. Rural schools faced with declining enrollments and declining tax bases have difficulty providing the array of curricula required to meet state graduation standards. Information about how other districts handle such problems can be beneficial to those districts grappling with these problems.

We chose transportation as our last data category because of the isolation so often associated with rural areas. Transportation information can be used as a rural indicator by examining the proportion of budget spent on transportation expense. Also of interest is the distance that buses travel to school.

Once we developed these categories of data, we contacted each of the seven state education agency liaisons to the North Central Regional Education Laboratory. We conducted personal and phone interviews with appropriate program staff in each of the state agencies. Anywhere from two to eight interviews were conducted depending on the data system design and the willingness of staff to be interviewed. The interviews were very open-ended and covered what data are collected, how they are collected, the unit of analysis for each data collection form used, purpose of the data collection, time frame of data collection, and who uses the data. We also questioned staff about their experience with and assessment of pupil accounting systems. For each of the states, we reviewed data dictionaries, reporting forms, data acquisition calendars, data collection plans, and memos or reports related to information system design. We also analyzed forms used to collect information. Finally, we assessed common and unique data elements and their relationship to policy, planning, and administrative issues.

Data Flow

Questions related to the flow of data are very important. The process by which data are collected and disseminated can determine the quality of the data and how useful they are to users throughout the education system. A better understanding of where the data collection process begins, who reports, how the data are organized, what units of analysis are used, what parts of the system are automated, and what parts are hand-entered is useful for our investigation.

Computers have increased the amount of data collected and processed; however, it is not clear that they have enhanced our ability to access information. In fact, there is more information now than ever before, but the absence of a system to manage it leaves us unable to access these data. Although computers provide an opportunity to manage the collection, analysis, and dissemination of information, the concept of a management information system is counter to the decentralized nature of information collection in state departments of education. Such a system focuses on how data are processed and raises questions like the following. Who is responsible for managing the information collection system? How decentralized is the data collection and analysis? How automated is the data collection process? How interactive is the information system, and what data elements should be included? The demand for information has increased exponentially with the advent of the computer. State education agencies are faced with increased demands for information, while struggling to incorporate this technology in a very complex system and continuing to perform regular job duties. Therefore, it is essential that educators explore systems to manage information in the same way that they manage curricula, staff, budgets, and other program areas.

Data Collection at the Federal Level

This report reviews two data collection efforts by the Center for Educational Statistics, the Common Core of Data and the Schools and Staffing Survey.

The Common Core of Data

The Common Core of Data (CCD) is a census of all public primary and secondary schools in the nation. It covers schools, students, and staff. Its purpose is:

> to identify all elementary and secondary students receiving free public education, all public elementary and secondary schools, and all educational agencies providing instruction and/or educational support services for students and schools; to maintain comparable data across all states; and to report public education statistics in a timely way.

Information is collected annually from all school districts and schools. Data are available at three levels: the public elementary and secondary school, the public elementary and secondary agency, and the state. Each state education agency designates a CCD coordinator, who is responsible for completing all survey forms.

Data Elements

The Common Core of Data includes fiscal and nonfiscal information. Nonfiscal information (which this report will discuss) is collected in the Public Elementary-Secondary School Universe Survey. The survey lists every elementary and secondary school in the country and provides basic information and descriptive statistics on the schools, students, and teachers. Table 1 provides an overview of the type of information collected, and Table 2 indicates the type of information collected at different levels of the educational system.

Data on types of schools refer to whether a school is a regular school, a special education school, a vocational education school, or an alternative school. The Center for Educational Statistics matches this information with information on agency type to determine whether a school is (1) a locally operated public school; (2) a regionally operated public school; (3) a state-operated public school such as a state school for the handicapped or the arts; or (4) a federally operated public school such as schools on Indian reservations. Information on federally operated schools is collected from the appropriate federal agency.

Operational status indicates whether a school (1) was open at the time of the last report and is still operational; (2) has closed since the time of the last report; (3) has opened since the time of the last report; or (4) was open at the time of the last report but not added to the Common Core of Data at that time.

Types of locale differentiate among communities according to the size and density of their populations. The 1988-89 survey will include questions on types of locale, but in the past, the Center for Educational Statistics had to adopt a number of procedures to determine locale in order to reflect school characteristics more accurately. Sample surveys conducted by the center such as the National Longitudinal Study of 1972, High School and Beyond, and the National Educational Longitudinal Study of 1988 have used census data on size of community in which the school is located. Locales are defined as urban, suburban, and rural or outside of SMSA (Standard Metropolitan Statistical Area). The National Assessment of Educational Progress (NAEP) utilizes census data reports from schools on community size categories and occupations of parents of students. These locale categories include extreme rural, which is a community with a population under 10,000, and where many residents are farmers and farm workers; small place, low

Table 1

CCD Information Overview

General Information
Names, Addresses, and Telephone Numbers
Types of Schools
Operational Status
Types of Locale*
Student Information
Number of Students by Grade
Number of Students by Race/Ethnicity (ungraded count)
Number of students eligible for free lunch
Staffing Information
Full-Time Equivalents (FTEs)

*Information on types of locale will be collected in the 1988-89 survey for the first time.

Table 2

CCD Student Information by Administrative Level

State Level	Education Agency Level	State Level
No. of Students X Grade	No. Students Ungraded	No. Students X Grade
No. of Students X Race/ Ethnicity	No. Students PK-12	No. High School Completers X Type
No. of Students Free Lunch Eligible	No. Special Education	
	No. High School Completers	

metropolitan, high metropolitan, main big city, urban fringe, and medium city. The Schools and Staffing Surveys on teacher demand and shortage and characteristics of schools, administrators, and teachers uses an expanded census definition that includes nine categories. This variety of definitions presents descriptive problems for data users as well as problems of comparability of data across similar locales.

In an attempt to standardize locale definitions, the 1988-89 school universe files of the Common Core of Date include a size code based on census categories: central city, urban fringe, non-MSA city, small town, and rural. Two of the five types are of special interest in this report, small town and rural. A small town has the following characteristics:

1. It is not contiguous with any city or urban fringe area.

2. It has a minimum population of 2,500 inhabitants.

3. It has a population density of at least 1,000 per square mile.

4. It does not have an Urbanized Area Code from the Bureau of the Census.

A rural area has the following characteristics:

1. It has fewer than 2,500 inhabitants and/or a population density of less than 1,000 per square mile.

2. It does not have an Urbanized Area Code from the Bureau of the Census.

The use of a standard geographic definition will allow for the consistent analysis of survey data across locales given that the sample size is sufficient. Schools in rural locales will be able to be identified for surveys conducted by other agencies. On the other hand, the locale codes do not provide for the inclusion of other rural indicators such as parental occupation. This geographic classifications system is based on the location of the school and not on the population that it serves. Thus, it is possible to have very large schools located in areas defined as rural that in fact draw their student bodies from more urbanized areas. However, it is also possible to examine the size of a school and couple it with the locale definition to arrive at a more accurate picture of a particular school. These data are available on tape from the Center for Educational Statistics.

Data Flow

As a data base the Common Core of Data is capable of expansion and development. Each state enters into an agreement with the Center that details a plan for collecting the data elements requested. These are annual plans built upon each year. In the coming years, the Center hopes to collect information on the number and organization of schools, the number of students by grade, the number of dropouts and their reasons for dropping out, student course-taking patterns, student assessment, characteristics of administrators, characteristics of teachers, teacher compensation, and outside earnings and teacher turnover. Especially given its breadth, the Common Core of Data offers great potential for comparative analysis of schools within a district and districts within or across states.

Schools and Staffing Survey

This is a mail survey conducted by the Center for Education Statistics. The data were collected between January and May of 1988 for the first time with public use data tapes scheduled for release beginning in December 1988. Topical reports will be available beginning in February 1989. The center plans to conduct this survey every two or three years. The components of this survey include the following:

1. A Teacher Demand and Shortage Questionnaire covers public school districts and private schools examining aggregate demand for new and continuing teachers by grade level and teaching field. This survey also includes a measure of teacher shortages by field, district and school policies on teacher salaries, compensation, retirement, hiring, and other factors affecting supply and demand for teachers.

2. A School Questionnaire surveys public and private schools about school programs, policies, and conditions; student characteristics; staffing patterns; and teacher turnover.

3. A School Administrator Questionnaire surveys public school principals and private school heads about their background characteristics and qualifications and their perceptions of school environment teaching profession.

4. A Teacher Questionnaire surveys public and private school teachers about demographic characteristics, teacher preparation and qualifications, career history and plans, assignments, working conditions, and perceptions of school environments and the teaching profession.

5. A Teacher Follow-up Survey is conducted after one year of a sample of The Teacher Survey respondents, including those who have left teaching and some who have remained, to determine characteristics of those who leave, why they leave, where they go, and how they compare with teachers who do not leave.

This sample includes 9,300 public and 3,500 private schools and is randomly selected from strata defined by state, by sector (public and private), and by levels designated as primary, secondary, or combined and sorted by urbanness. At present, there are 5,600 districts associated with the 9,300 public schools that compose the school district sample.

The teacher sample can be sorted by field: general elementary, special education, and all other at the elementary level; and math, science, social sciences, English, vocational education, and special education at the secondary level.

The most significant contributions of this effort of the Center for Education Statistics are the ability to define rural area and an effort to make comparable data available across state education agencies. Although similar information is collected in the seven states under consideration, there are problems of comparability of data elements. The problems revolve around definition of data elements, time period of data collection, missing or incompatible data elements, and duplication of data elements collected.

In summary, data available at the federal level cover information on schools, students, teachers, and administrators. Data collected on students and schools represent universal coverage through the Common Core of Data. The Schools and Staffing Survey is a

sample that examines the more intricate patterns of teacher supply and demand, school policies, and the backgrounds of administrators. This is a rich source of information to help better understand important aspects of quality education. There are no data on curriculum or transportation collected at the federal level.

The NCREL Region

There are no data collected specifically at the seven-state regional level other than that collected by the NCREL for its own planning and program implementation purposes. Data that reflect this region or any multistate region can be drawn from the Common Core of Data or from the Schools and Staffing Survey. Data from the state education agencies present special problems of comparability of data elements collected, definition of data elements, time frame of data collection in each of the states, and reporting methods. Even though vast amounts of information are collected in each of these seven states, these data do not allow for the development of a detailed regional portrait that can describe conditions in the region as a whole. Through the use of the CCD and the SASS a regional picture can be drawn that breaks out the characteristics of rural schools. In the case of the SASS, consideration should be given to the sample size to determine whether it is of sufficient size to describe the conditions of rural education in this region.

State Education Agency Information

This section of the report discusses data collected by state education agencies on students, faculty and staff, curriculum, and transportation. These data are chosen because they are basic to describing the characteristics of the clients of the education system, students; the implementors of educational programs, teachers; and the substance of educational programs, curriculum. Transportation is chosen to enhance our understanding of ruralness by examining issues of isolation using distance travelled and proportion of budget spent on transportation service.

Student/Pupil Data Elements

Information on the number of students at the school level broken out by grade, sex, and race and ethnicity is a basic information need of the school and district. Table 3 provides an overview of the data elements collected on student demographics in each state in the NCREL region. Such information describes the school and the characteristics of the students in each school. All states in the region collect information on these characteristics. This information is usually collected in the fall and referred to as the Fall Housing Report. Most states collect these data at the school level and report it at either the school or district level. Michigan reports only at the school district level and does not report student sex. Iowa, Michigan, and Ohio report race and ethnicity by school totals only and not by grade or sex. Forms from Indiana, Illinois, and Wisconsin are similar. These data are used for reimbursement purposes and to monitor class size to examine the racial and ethnic composition of the district or, where available, the individual class. Over time, this information can be used to examine enrollment trends and changes in the racial and ethnic composition of the district, school, or individual grades. The sex indicator could be used in rural areas to target female students for nontraditional vocational education programs. High unemployment in rural areas results in females competing with men with strong and lengthy attachments to the labor force or with men with training. Traditional female jobs, except for the health field, offer low wages and encourage dependence on welfare.

Table 3

Student Annual Census

Data Item	IL	IA	IN	MI	MN	OH	WI
Date		X	X		X		X
District Name or Number	X	X	X	X	X	X	X
School Name or Number	X	X	X	X	X	X	X
Address	X	X	X	X			X
City	X	X	X	X			X
Zip Code	X	X	X	X			X
Telephone Number	X			X	X		
County	X					X	
Special Education Designation					X		
School Lunch Participation					X		
Chapter 1 School					X		
Enrollment X Grade X Sex X Racial/Ethnic	X		X		X		X
Change in Membership				X			
No Change in Membership				X			
Enrollment X Grade X Regular X Special				X			
Total Full-time Students				X	X	X	
Total Part-time Students					X		
Adjustments (Related to State Law)				X			
Grade X Sex						X	
Information Retrieval Number						X	
Ethnic Composition Total		X				X	
Grade Span	X						
Kindergarten X Race X Sex X Days Attended	X						
Retained Student X Sex X Race/Ethnic			X				
Postgraduate Information / Follow-up			X				
Grade X Sex X Total		X					

The racial and ethnic composition of classes is a valuable indicator. It gives local principals and superintendents some indication of potential language or cultural programs that might increase students' success in the classroom. Teachers could use such information to anticipate the needs of students and adjust the curriculum to provide more culturally relevant learning experiences.

Certified Staff

Table 4 is a description of the data elements collected on certified staff in the seven states in the NCREL region. Basic information on teachers is common across states. Information such as name, address, social security number, date of birth, and salary are all available. Information that could be used to examine teacher mobility is less consistently reported. Data on their higher education institution; teachers new to, or continuing in the district; length of employment; no longer employed; or on leave are not reported in all states.

These data can be used to profile some characteristics of rural teachers, identify needs for staff development activities, assess teacher experience and training, and provide a staffing plan of the district for attendance center or school assignment. These data are reported to the state to insure the certification of teachers to teach assigned subjects. A regional picture of certified staff is not possible because of the disparity of data elements collected by the different states.

Curriculum Information

Rural schools are often financially unable to offer the variety of curriculum necessary for students to compete for admission to universities or to compete for jobs in a labor market requiring increasingly complex skills. Distance learning is providing opportunities to offer the variety of curriculum required by the state and to meet the learning needs of students. The means by which curriculum is offered is not included in these reports. Table 5 shows the various data elements collected at the school level in the NCREL region. These data can be aggregated to the district or state level, but the beginning point for data collection is the school. The great variability in data elements and definition make state comparisons difficult. Information on curriculum is not collected annually in all states. In Illinois, they are collected every five years, in Wisconsin, every three years. Minnesota, Indiana, Ohio, and Iowa collect these data annually. Michigan does not collect curriculum information. These data are used to meet state graduation requirements or requirements for a balanced curriculum.

Minnesota and Wisconsin collect curriculum information at the elementary school level, as well as at the secondary level. Minnesota monitors elementary curriculum by requiring the copyright date of the texts used in elementary courses. Illinois collects information on courses geared to special populations within the school, such as teen pregnancy, dropouts and bilingual students. In general, there is variability in terms of how individual course offerings are reported. The most comprehensive format is course offering by total enrollment by sex and by race and ethnicity. The data element that describes length of course offering varies.

There is no data element that describes how courses are taught. Data elements in this particular category are very difficult to match. Differing state requirements determine the variety of reporting formats, i.e. graduation requirements versus curriculum monitoring. A regional picture would be difficult to draw using these data. Rural schools could use this information to determine what is being taught in individual schools but not the means by which the course is offered.

Table 4

Certified Staff
Annual Report

Data Element	IL	IA	IN	MI	MN	OH	WI
SSN	X	X	X	X	X	X	X
Name	X	X	X	X	X	X	X
Sex	X	X	X	X	X	X	X
Date of Birth	X	X	X	X	X	X	X
Salary	X	X	X	X	X	X	X
Contract Type		X	X				
Position	X	X	X	X	X	X	X
Race/Ethnicity	X	X	X	X	X	*	X
Courses Assigned	X	X	X	X	X	X	X
Grades Assigned	X	X	X	X	X	X	X
Fed. Funded Position			X				
Excluded Personnel			X				
Years Training			X				
Number of Semester Hours Completed			X			X	
Professional Experience	X	X	X	X	X	X	X
Percent Time Employed	X		X				X
Last Year Employment			X	X			
School	X	X	X		X		
District/Corporation	X	X	X	X	X	X	X
County	X					X	X
Number of Students/ Taught Subjects					X	X	
No Longer Employed or on Leave					X	X	
New to District					X	X	
Returning from Leave						X	
School Year	X			X			X
School Building ID				X	X		X
Type Certification	X			X	X		
Higher Education Institution	X			X	X		
Major/Minor		X		X			
Highest Degree	X		X	X	X	X	X
School Type (Elem., Sec.)							X
Reason for Termination or Leave of Absence	X						
Teacher Telephone	X						
Teacher Street	X						
Teacher City	X						
Teaches in More than One Attendance Center	X						
Length of Employment	X				X		
Percent Time Administration	X						
Bachelor's Degree	X						
Periods per Week					X		
Length of Period					X		
Course Length					X		

*Position not tuition refunded.

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Table 5

Curriculum Report

Data Item	IL	IA	IN	MI*	MN	OH**	WI
Individual Courses	X	X	X			X	X
School Year	X	X	X			X	X
Enrollment X Grade X Sex							X
Length of Offering	X					X	X
Elementary					X	X	X
Secondary	X	X	X		X	X	X
Middle School/Junior High	X				X		X
System of Scheduling	X						
Male/Female (7 - 8)	X						
Male/Female (9 - 12)	X						
Class Schedule	X	X					X
Graduation Requirement	X						
Number of Study Period/Length	X						
Courses Taught in Alternate Year	X						
Availability of Summer Courses	X						
Special Courses for Truants, Bilingual, etc.	X						
Courses X Sex X Race X Ethnicity in Math X Science (High School)	X						
Courses X Enrollment X Grade X X Sex (7 - 12)	X						
Unit of Credit	X						
Required Courses	X				X	X	
Remedial or Advanced Placement	X						
College Preparation	X						
Significant Changes in Program	X						
School Name	X				X	X	
County						X	X
District	X					X	X
Graduate Follow-up						X	
Unit Scheduled X Course						X	
Opening X Closing School Time						X	
Teacher Hours X Breaks						X	
State Requirements X Subject						X	
Designated Laboratory Courses						X	
Kindergarten Schedules						X	

(continued)

Table 5 (continued)

Data Item	IL	IA	IN	MI*	MN	OH**	WI
Grades X Opening/Closing Times						X	
Copyright Dates for Textbooks in Elementary School						X	
Multidisciplinary X Number of Sections X Semester Enrollments			X				
Courses X Number of Sections X Semester Enrollments			X				
Courses X Unit Value X Sex		X					
Curriculum Offering Based on Philosophy, Goals & Objective of School Board (Elementary)					X		
Have District's Philosophy, Goals & Objects Been Adapted for this School? (Elementary)					X		
Is Curriculum Appropriate to Developmental Levels					X		
Physical							
Social							
Emotional							
Cognitive							
Integrated Curriculum					X		
Scope, Sequence, Coordination, Evaluation & Review					X		
Most Recent Curriculum Review					X		
Next Scheduled Curriculum Review					X		
Optional Curriculum Offering					X		
Balance in Curriculum Offering (Specifics not Listed)							
Courses X Changes Required for Compliance					X		

*No form available.

**Ohio has open-ended questions related to curriculum issues that are not included.

Transportation Information

There is no matrix for transportation data. Data elements in this area are so diverse and extensive that it is beyond this author's ability to reduce them to one simple matrix. There are common information categories that can be reviewed. Most states collect information on the number of vehicles by type or size of the vehicle, vehicles owned by the district or under contract, and the number of students transported by vehicle type. Data are available in all states that can be used to determine direct versus indirect costs, number of employees, safety regulations, and depreciation of vehicles. The variety of state laws regulating transportation safety, as well as the numerous differences in fiscal policies and fiscal administrative procedures, dictate that data elements will be diverse.

It is possible to determine proportion of budget spent on transportation relative to total budget, but there is not information on distance travelled. Wisconsin collects distance information up to 18 miles from the school. Transportation data is in some states the most complicated and time-consuming. It is often collected in an annual fiscal report, as well as on its own.

Summary on Data Elements

There is great variability in the number and kind of data collected in the categories reviewed in this report. The Center for Education Statistics' Common Core of Data and Schools and Staffing Survey provide comparable state, multistate or regional, and national information on schools, students, teachers, and administrators. These data bases do not currently include information on curriculum and transportation. However data from the SASS disaggregate to the state level; district or individual school information is not reported.

Each of the seven states in the NCREL region have unique data systems that do not allow for the development of a multistate regional picture. Basic descriptive information is similar, such as that used in the CCD, but more specific comparisons cannot be made. This again is due to the different data elements collected in each state, the definitions of individual data elements, the time frame of data collection, especially in the area of curriculum. The way that these data are collected and disseminated is problematic in portraying a regional picture. These issues are covered in the following section of the report.

Rural schools share many common problems with their urban and suburban counterparts in the use of these data. These data elements do not always represent the kind of data that is most useful for the policy planning and administrative decision-making needs of local schools. Rural schools and all primary and secondary schools could benefit from more specific information to better understand the student population, data to examine teacher mobility, data on alternative ways of offering complex curriculum, or data to demonstrate equity of funding when large portions of budgets are spent for transportation. Many of these data are collected to meet reporting or funding requirements. The inclusion of data useful at the local school and education agency would benefit the entire education system.

Data Flow

The purpose of this section of the report is to provide a brief overview of the efforts of states to develop data management systems and the facilitators and barriers to such system design.

Data collection in state education agencies is decentralized. Each department is responsible for collecting information on their particular program area. Often departments within state agencies are unaware of data collected by other departments. The advent of the computer has enhanced the ability to collect information and has set up the expectation that information can be made available in a more timely and accurate manner. In the interviews with staff at state education agencies, it is clear that they are struggling to keep pace with demands for information, incorporating computer technology into the data collection system, as well as seeking to meet the daily tasks of collecting required information.

There are a variety of data collection methods employed in the states in the NCREL region. A description of each is beyond the scope of this report. There are, however, common characteristics in these data collection systems that can be identified. Data flow from either the school or district level to a regional education service area, if one is present; and then to the state education agency. Data are reported using paper and pencil in most cases. Oftentimes computer printouts are sent with the most current information to the local school district office and local staff update this information. In very few instances, the computer capability at the local level is used to report directly to the state education agency. Wisconsin has a system of diskettes on which fiscal information is collected. In Minnesota and Ohio, there are computer consortia where data are sent and then entered into computers for reports to the state education agency.

At the state level, there is no one department that is in charge of the information system. There is a forms development or management function usually represented by a single staff person. Each department collects its own information and works with the data processing unit for data input and retrieval and the development of required reports. There is generally a six-month to one-year turn-around time for annual hard-copy reports.

The flow of data back to the local education agencies is limited. Here rural schools and rural districts face many of the same problems as all school districts. There are few interactive computer systems that allow for the exchange of information between the state and the local education agency and among local education agencies. Access to information is a serious problem at all levels of the system. There is a need at all levels of education to respond to a variety of constituencies and program issues.

This is not news to anyone working directly in education, nor is it a problem specific to education. All policy areas of government are faced with similar problems. It is not so much a question of information overload, as it is a question of how to design systems to manage information. Rural education is not unique in its need or access to information. One of the proposed solutions to centralizing the collection of and access to information are pupil accounting systems which are discussed in the next section of the report.

Pupil Accounting Systems

Most states are aware of or have considered developing pupil accounting systems. In these systems, the student is the unit of analysis. These accounting systems begin at the local level and provide information on individual students as they progress through the education system. Data for state reporting requirements can be drawn from individual student records. The advantages of these systems is that they would greatly reduce the paper and reporting burden currently being placed on the local education agency. Local microcomputers could be used; the data would only have to be input once; and individual data elements can be sorted for inclusion in the appropriate reports to the state. Problems with this system are related to confidentiality of student records, and system design and implementation. Data on individual students in such a system can be accessed by a variety of individuals which presents problems of confidentiality. System design problems center around the selection of data elements, hardware and software selection, and gathering the cooperation of the variety of department heads, local school staff and others who would be involved in pupil accounting systems. Data from this record-keeping system can be stored at a variety of locations. Requirements of a good system include: easy access to data; data elements common to all Local Education Agencies (LEAs); and flexibility for local systems to add additional data. Hardware should be compatible with the state system, and software should be developed that supports local information needs. Training for staff involved in the system is a high priority.

These pupil accounting systems provide an alternative to the decentralized data collection procedures in education. The data is centralized in one student record and can be distributed as necessary to meet other reporting requirements. The money, staff, and expertise to develop these systems is a major consideration. Complex political, programmatic, and policy questions are also involved in the development of such a system.

The flow of data through the system is very complex and cumbersome. The most severe and frustrating problem is access to the data and filling out the volume of forms that the information system requires. Rural schools are only more severely disadvantaged than other schools if they lack the funds to buy and maintain computers. It is also clear that access to computers is not the answer to access to information. Systems that manage the collection, analysis, and dissemination of data are the answer.

Conclusions

The need for a clearinghouse on computer readable information on rural education was considered in this work. A clearinghouse is defined as a facility that selects data related to client needs, designs hard copy or computer disks or tapes, and disseminates this information to a community of users. There is a need for a body of information that is not being collected. This is especially true in rural areas where creative approaches to education are needed. Library offerings, distance learning programs, strategies to deal with dropouts, and a variety of other issues are important. Schools and districts need a vehicle to share this kind of information. A clearinghouse is considered premature given the current needs of state education agencies to develop a quality information system. The more pressing need is for research and development for the management of information and the organizational development issues related to designing a management information system. In addition to keeping current with reporting requirements, agency staff are identifying data elements, assessing hardware configurations, identifying users and their information needs, and, in some cases, planning for the incorporation of

their systems with the larger state system. All this is occurring in the absence of a research and development capability to suggest how to proceed. More than a clearinghouse, rural education, and, in fact, all aspects of education would benefit from a research and development capability that examines the following issues in the design and implementation of management information systems in education.

Policy Formulation

What are the relevant policy questions that drive the design and development of a management information system in primary and secondary education? By what process, can these questions be developed? What are the unique features of a management information system in education?

System Design

What hardware configurations are most effective and efficient given the diverse needs of state education agencies? What is the most cost-efficient method of building a hardware capability? What are the technical questions that will face state education agencies as they seek to design hardware? What kinds of software are most appropriate to support the volume of information as well as the needs of users?

Program Accountability

What are the major data elements by program area that should be included in this information system to plan and administer education programs effectively? What data elements are important for monitoring, assessment, and evaluation?

System Users

What are the needs of the user community? How should user needs be prioritized for development purposes? What are the training and technical assistance needs of users to participate in and benefit from this information system?

Organizational Development

What are the politics of implementing a management information system? What is the impact on individual program areas? What kinds of employees will be needed in order to operate this system? How should the management information system function within the agency?

Rural education and all education will benefit from such a research and development effort. Expertise in the design of information systems is available from higher education institutions, foundations, and professional organizations. These groups can work with state and local agencies to support the development of information systems that can respond to the variety of audiences needing information and to insure that the clients of primary and secondary education, the students, are well served. One cannot review the information involved in the development of this report and not be awed by the complexity of the system. We have become addicted to complexity. There is a need to proceed simply, to take manageable steps and to respect the experience and knowledge of all those who can contribute to this process.